CLAIMS:

1. A method of filtering transient errors in data collected comprising:

predicting the transient errors using correlation of the data; and

correcting the transient errors based at least in part on the correlation.

2. The method of claim 1, wherein said correcting includes delaying the data.

3. The method of claim 2, wherein said delaying the data comprises tuning the amount of delay to a particular wireless sensor network.

4. The method of claim 3, wherein said tuning the delay comprises forming a prediction history tree.

5. The method of claim 2, wherein said delaying the data comprises forming a prediction history tree.

6. The method of claim 1, wherein said correlation includes autoregressive moving average correlation.

7. The method of claim 1, wherein said predicting and correcting are performed by a wireless device.

8. A network (10) comprising:

a device (12, 18) configured to generate offline a predictive model at least partly based on per-node redundancy in sensor data

received via at least one sensor (16) of the network, the device further configured to determine partly based on the predictive model whether to correct observed data received via the at least one sensor.

9. The network of claim 8 in which the at least one sensor is one device.

10. The network of claim 8 in which the predictive model is a linear model.

11. A device (12, 18), comprising:

first logic (24) configured to generate offline a predictive model at least partly based on per-node redundancy in sensor data from at least one sensor (16) and second logic (30) configured to determine partly based on the predictive model whether to correct observed data from the at least one sensor.

12. The device of claim 11 wherein the first logic includes at least a portion of the second logic.

13. The device of claim 11 wherein the second logic includes at least a portion of the first logic.

14. The device of claim 11 wherein the first logic and the second logic do not overlap.

15. A method for improving reliability of collected sensor data over a network, the method comprising steps of:

by a device other than a sensor node,

collecting initial sensor data from one or more sensor nodes in the network;

pre-processing of initial sensor data to determine a level of inherent temporal redundancy in the data;

developing a predictive model based upon inherent temporal redundancy in the initial sensor data;

by a device other than a sensor node,

computing the likely value of a next sensor reading from a sensor node in the network based upon the predictive model;

determining whether a value received from the sensor node is reliable with respect to the likely value, and, if not, correcting the value received from the sensor node.

16. The method of claim 15, wherein said collecting initial sensor data, said pre-processing of initial sensor data, and said developing a predictive model are performed offline.

17. The method of claim 15, further comprising:

after said computing the likely value of a next sensor reading, receiving the next sensor reading.

18. The method of claim 15, wherein the predictive model comprises an auto-regressive moving average (ARMA) model.

19. The method of claim 15, wherein said computing the likely value of a next sensor reading is further based on a history of previously-received sensor data and a history of errors.

20. The method of claim 15, wherein said correcting comprises determining, for a sample n, a corrected value $Y_C(n-K)$, where K is a decision delay, in number of samples.

21. The method of claim 20, wherein said determining a corrected value further comprises forming a prediction history tree including paths representing choices between the value received from the sensor and a predicted value.

22. A method for improving reliability of collected sensor data over a network, the method comprising steps of:

by a device other than a sensor node,

computing the likely value of a next sensor reading from a sensor node in the network based upon a predictive model based upon inherent temporal redundancy in sensor data;

determining whether a value received from the sensor node is reliable with respect to the likely value, and, if not, correcting the value received from the sensor node.

23. The method of claim 22, wherein said computing the likely value of a next sensor reading is further based on a history of previously-received sensor data and a history of errors.

24. The method of claim 22, wherein said correcting comprises determining, for a sample n, a corrected value $Y_C(n-K)$, where K is a decision delay, in number of samples.

25. The method of claim 24, wherein said determining a corrected value further comprises forming a prediction history tree including paths representing choices between the value received from the sensor and a predicted value.